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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,513	03/19/2004	Peng Zhang	06293P3 USA	7652

23543 7590 06/01/2007

AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
7201 HAMILTON BOULEVARD
ALLENTOWN, PA 181951501

EXAMINER	
WEBB, GREGORY E	
ART UNIT	**PAPER NUMBER**
1751	

MAIL DATE	DELIVERY MODE
06/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/804,513	ZHANG ET AL.	
	Examiner	Art Unit	
	Gregory E. Webb	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *29 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-25,28,29,32 and 35-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-25,28,29,32 and 35-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

5-29-07

DETAILED ACTION

Response to Amendment

1. The applicant's amendments filed 3/29/2007 and 8/3/2006 have been entered and considered.

Response to Arguments

2. Applicant's arguments filed 3/29/2007 have been fully considered but they are not persuasive. The examiner agrees that the amendments removing groups I and II have limited the scope of the claims but has not overcome all prior art.

3. The applicant has deleted two of the acetylenic groups. However, group VII is also an acetylenic group taught by the prior art. As the applicant teaches in the originally filed paragraph [0038] teaches 2,4,7,9-tetramethyl-4,7-decane diol as an example of group VII. This compound is taught in the prior art of record. In particular, Barber, Leslie Cox (US20050176605) teaches the following:

> [0136] Example process solutions were prepared by adding 0.05 weight percent of **2,4,7,9-tetramethyl-4,7-decane diol** to deionized water under continuous stirring. A substrate was processed in the following manner: a silicon wafer provided by Wafernet, Inc. and coated with an anti-refelective coating was coated with a TOK 6063 193 nm photoresist and exposed to a 193 nm light with a ASML PAS 5500/1100 scanner, heated to a temperature of approximately 115.degree. C. for a time of about 1 minute, and then developed to form a patterned photoresist with a dilute **TMAH** solution. The **TMAH developer solution** was applied by dynamically dispensing a 0.26N **TMAH** solution onto the substrate and allowed to set for a period of 45 seconds. The process solution was then dynamically dispensed onto the substrate surface while the wafer substrate slowly spun at 500 rpm to distribute the solution on the substrate surface. The dispense process lasted for a period of 15 seconds. Afterwards, the substrate was spun at 3,500 rpm to dry. (*emphasis added*)

4. Similarly in group III, the applicant teaches in the specification the example compound 3,5-dimethyl-1-hexyn-3-ol. This was also shown in the previous rejection to be taught by Masakazu (US4944893), Becknell, Alan F. (US5508141), and Marsella, John Anthony (US7078358). These rejections were not addressed by the applicant's amendments.

5. In addition to maintaining those previous rejections still pertinent, the examiner has added additional references to address the amendment.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 17, 18, 24, 35-38, and 50-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Lassila, Kevin Rodney (US20050176605).

Concerning the secondary surfactant, Lassila, Kevin Rodney teaches the following:

> [0045] wherein R.sub.1 and R.sub.4 are a straight or a branched alkyl chain having from 3 to 10 carbon atoms; R.sub.2 and R.sub.3 are either H or an alkyl chain having from 1 to 5 carbon atoms; and m, n, p, and q are numbers that range from 0 to 20. The surfactants are commercially available from Air Products and Chemicals, Inc. of Allentown, Pa., the assignee of the present invention, under the trade names **SURFYNOL**.RTM. and **DYNOL**.RTM.. (*emphasis added*)

Concerning the aqueous solvent, non-aqueous solvent and the methanol, Lassila, Kevin Rodney teaches the following:

> [0066] In certain embodiments, the process solution may contain at least one non-**aqueous solvent** that is miscible in an **aqueous solvent** or is water-miscible. In these embodiments, the amount of non-**aqueous solvent** within the process solution may range from about 1 to about 50% by weight with the balance of the solvent within the process solution comprising an **aqueous solvent**. Examples of water-miscible non-**aqueous solvent**s include **methanol**, ethanol, **isopropyl alcohol**, and **THF**. (*emphasis added*)

Concerning the preferred solvents, Lassila, Kevin Rodney teaches the following:

> [0065] In embodiments where a non-aqueous solvent is used in addition to or in place of an aqueous solvent such as water, the non-aqueous solvent selected will preferably not react with the alkoxylated acetylenic diol surfactant contained therein, other additives within the process solution, or the substrate itself. Suitable solvents include, but are not limited to, hydrocarbons (e. g. **pentane** or **hexane**); **halocarbons** (e. g. **Freon 113**); **ethers** (e. g. **ethylether** (Et.sub.2O), **tetrahydrofuran** ("**THF**"), **ethylene glycol monomethyl ether**, or **2-methoxyethyl ether** (**diglyme**)); nitriles (e. g. CH.sub.3CN); or aromatic compounds (e.g. benzotrifluoride). Still further exemplary solvents include **lactates**, **pyruvates**, and **diols**. These solvents include, but are not limited to, **acetone**, **1,4-dioxane**, **1,3-dioxolane**, **ethyl acetate**, **cyclohexanone**, **acetone**, **1-methyl-2-pyrodidianone** (**NMP**), and **methyl ethyl ketone**. Other solvents, include **dimethylformamide**, **dimethylacetamide**, **N-methyl pyrrolidone**, **ethylene carbonate**, **propylene carbonate**, **glycerol** and derivatives, **naphthalene** and substituted versions, **acetic acid** anyhydride, propionic acid and propionic acid anhydride, dimethyl sulfone, benzophenone, diphenyl sulfone, phenol, m-cresol, dimethyl sulfoxide, diphenyl ether, terphenyl, and the like. Still further solvents include propylene glycol propyl ether (PGPE), methanol, ethanol, 3-heptanol, 2-methyl-1-pentanol, 5-methyl-2-hexanol, 3-hexanol, 2-heptano, 2-hexanol, 2,3-dimethyl-3-pentanol, propylene glycol methyl ether acetate (PGMEA), ethylene glycol, isopropyl alcohol (IPA), n-butyl ether, propylene glycol-n-butyl-ether (PGBE), 1butoxy-2-propanol, 2-methyl-3-pentanol, 2-methoxy**ethyl acetate**, 2-butoxyethanol, 2-ethoxyethyl acetoacetate, 1-pentanol, and propylene glycol methyl ether. The non-aqueous solvents enumerated above may be used alone or in combination with two or more solvents. (*emphasis added*)

Concerning the 2,4,7,9-tetramethyl-5-decyne-4,7-diol, Lassila, Kevin Rodney teaches the following:

> [0094] Example 3 illustrates the preparation of the 3.5 mole ethoxylate of **2,4,7,9-tetramethyl-5-decyne-4,7-diol** capped with 2 moles of propylene oxide using trimethylamine catalyst and a preformed ethoxylate. The 3.5 mole ethoxylate of **2,4,7,9-tetramethyl-5-decyne-4,7-diol** is commercially available from Air Products and Chemicals, Inc. and is marketed as Surfynol.RTM. 440 surfactant. (*emphasis added*)

Concerning the 2,4,7,9-tetramethyl-4,7-decane diol, Lassila, Kevin Rodney teaches the following:

> [0136] Example process solutions were prepared by adding 0.05 weight percent of **2,4,7,9-tetramethyl-4,7-decane diol** to deionized water under continuous stirring. A substrate was processed in the following manner: a silicon wafer provided by Wafernet, Inc. and coated with an anti-refelective coating was coated with a TOK 6063 193 nm photoresist and exposed to

> a 193 nm light with a ASML PAS 5500/1100 scanner, heated to a temperature of approximately 115.degree. C. for a time of about 1 minute, and then developed to form a patterned photoresist with a dilute TMAH solution. The TMAH developer solution was applied by dynamically dispensing a 0.26N TMAH solution onto the substrate and allowed to set for a period of 45 seconds. The process solution was then dynamically dispensed onto the substrate surface while the wafer substrate slowly spun at 500 rpm to distribute the solution on the substrate surface. The dispense process lasted for a period of 15 seconds. Afterwards, the substrate was spun at 3,500 rpm to dry. (*emphasis added*)

7. Claims 17-19, 24, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka (US4944893).

Concerning the semiconductor devices and the rinsing, Tanaka teaches the following:

> As is well known, the manufacturing process of **semiconductor devices** such as ICs and LSIs generally involves the successive steps in which a **substrate** of, for example, semiconductor silicon wafer is first provided on the surface with a thin film such as oxide film, then the surface is coated uniformly with a resist in the form of a solution to form a resinous layer sensitive to actinic rays, the resist layer is exposed pattern-wise to actinic rays followed by a development treatment to form a patterned resist layer, the underlying thin oxide film is subjected to pattern-wise etching with the patterned resist layer as the mask against etching and finally the patterned resist layer is removed completely. The resist having sensitivity to actinic rays implied in the present invention include **photoresist**s, electron-beam resists, X-ray resists and the like. (*emphasis added*)

Concerning the secondary surfactant, Tanaka teaches the following:

> Examples of suitable acetylene alcohol include 3-methyl-1-butyn-3-ol, 3-methyl-1-pentyn-3-ol, 2,5-3,6-dimethyl-4-octyn-3,6-diol, 2,4,7,9-tetramethyl-5-decyn --4,7-diol, 3,5-dimethyl-1-hexyn-3alcohols can be used either singly or as a combination of two kinds or more according to need. Among the above named acetylene alcohols, 3-methyl-1-butyn-3-ol and 3-methyl-1-pentyn-3-ol are particularly preferable in respect of the high effectiveness in achieving the object of the present invention. Several commercial products of acetylene alcohols are available including Surfynols and Olfines (products by Air Products and Chemicals Co., Inc.) as the preferable examples in respect of the availability. (*emphasis added*)

Concerning the non-aqueous solvent, Tanaka teaches the following:

> 4. The remover composition for resist as claimed in claim 1 wherein the halogenated hydrocarbon compound is selected from the group consisting of **1,2,3-trichloropropane, dichloropentane, hexyl chloride, 1,2-dibromoethane, chlorobenzene, 1,2-dichlorobenzene, trichlorobenzene, bromobenzene, 1,2-dibromobenzene and 2-chlorotoluene**. (*emphasis added*)

Concerning the preferred solvents, Tanaka teaches the following:

> 5. The remover composition for resist as claimed in claim 1 wherein the aromatic hydrocarbon compound is selected from the group consisting of **naphthalene**, methyl **naphthalene**, dimethyl **naphthalene**, tetrahydro**naphthalene**, dodecyl benzene, di(dodecyl)benzene, octyl benzene, decyl benzene, isopropyl **naphthalene** and diisopropyl **naphthalene**. (*emphasis added*)

Concerning the 3,5-dimethyl-1-hexyn-3-ol, Tanaka teaches the following:

> **Surfynol 61**: **3,5-dimethyl-1-hexyn-3-ol**, a product by Air Products and Chemicals, Inc. (*emphasis added*)

8. Claims 17-19, 24, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Hart (US5508141).

Concerning the reducing defects and the semiconductor devices, Hart teaches the following:

> Further, it is generally recognized that the current resin/photoactive functionality combinations found in common **photoresist**s are capable of resolving smaller features. On the other hand, the current liquid and dry film **photoresist**s do not maximize those capabilities in that to form finer features with a good manufacturing yield it is generally recognized that thinner films with fewer **defects** than those provided by current liquid and dry film **photoresist** application methods are needed. However, other known application methods, such as lamination, roll coating, flood screen printing, spraying, dip coating, curtain coating, etc., fail as an appropriate application method as the film thickness decreases below 1 mil. For instance, in order to resolve features as small or smaller than 4 mils, which is currently the state of the art, it is preferable that the film thickness of the protective covering used be 25% or less of the feature size being resolved. However, when attempting to obtain thicknesses less than 1 mil with those methods, a significant number of **defects** begin to appear in the coating that results. (*emphasis added*)

Concerning the secondary surfactant, Hart teaches the following:

> When using latices, a surfactant from the group described earlier may be used to emulsify components (i) and (ii) in order to assist the deposition process. A commercially available surfactant used in the Examples herein is Surfynol TG surfactant from Air Products, Inc. (*emphasis added*)

Concerning the rinsing and the deionized water, Hart teaches the following:

> To 67.0 g of this latex emulsion was added 0.8 g of hydrofluoric acid, 16.7 g of 30% hydrogen peroxide, and enough **distilled water** to fill the mixture to 100 ml. A copper-covered, glass-reinforced epoxy laminate submerged in the latex/acid/peroxide composition for five (5) minutes exhibited a coating that, upon removal from the composition, could not be removed by vigorous **rinsing** with water. The coating was then dried for 10 minutes at 90.degree. C. (*emphasis added*)

Concerning the aqueous solvent, preferred solvents and the 3,5-dimethyl-1-hexyn-3-ol, Hart teaches the following:

> Emulsion polymerization techniques, conditions and polymerization initiators are those well known in the art. Known techniques for the addition of monomers in emulsion polymerization techniques include continuous addition or sequential addition of monomer in separate portions. Known surfactants suitable for emulsifying the monomers in aqueous solution include, but are not limited to, 2,4,7,9-tetramethyl-5-decyn-4,7-diol, **3,5-dimethyl-1-hexyn-3-ol**, **glycerol** monostearate, dipropylene glycol monostearate, dipropylene glycol monolaurate, dipropylene glycol monooleate, pentaerythritol monooleate, sodium dioctyl sulfosuccinate, sorbitan monolaurate, sodium lauryl ether sulfate, potassium xylene sulfonate, sodium cumene sulfonate, ethylene glycol monostearate, **glycerol**, nonyl phenol ethoxylate, polyoxyethylene cetyl ether, N-octadecyl sulfosuccinamate, polypropylene glycol monostearate, 3,6-dimethyl-4-octyn-3,6-diol, dodecyl benzene sodium sulfonate, and sodium lauryl sulfate. When emulsion polymerization is used to prepare a bath, the surfactant used in the polymerization reaction may also serve as surfactant (v) of the emulsion. (*emphasis added*)

Concerning the methanol, Hart teaches the following:

> A solution of 76.5 g HT 9690 novolak resin from Ciba-Geigy, 51.0 g HRJ 10805 novolak resin from Schenectady Chemicals, 22.5 g THBP-215 Diazo Ester from International Photochemicals, 15 g Hexyl Carbitol (hexyloxy ethoxy **ethanol**) from Union Carbide, and 150 g ethyl acetate was prepared. (*emphasis added*)

9. Claims 17-19, 24, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Roberts (US7078358).

Concerning the secondary surfactant and the 2,4,7,9-tetramethyl-5-decyne-4,7-diol, Roberts teaches the following:

> The acetylenic diols of the present invention include dimethyl octynediol, (Surfynol 82); tetramethyl decynediol (Surfynol 104); 2,6,9,13-tetramethyl-2,12-tetradecadien-7-yne-6-9-diol; 2,6,9-trimethyl-2-decen-7-yne-6-9-diol; 7,10-dimethyl-8-hexadecyne-7,10-diol; **2,4,7,9-tetramethyl-5-decyne-4,7-diol**; 4,7-dimethyl-5-decyne-4,7-diol; 3,6-diethyl-4-octyne-3,6-diol; 2,5-dicycloprpyl-3-hexyne-2,5-diol; 2,5-diphenyl-3-hexyne-2,5-diol; **2,5,8,11-tetramethyl-6-dodecyne-5,8-diol**. (*emphasis added*)

Concerning the deionized water, Roberts teaches the following:

> 1. A prewetted cleaning wipe for cleaning surfaces in an electronic materials fabricating area having a low volatile organic chemical content in the range of 0.001% to 0.5% by weight and low nonvolatile residue property of at least 1.times.10.sup.-4 torr at 25.degree. C. comprising; a woven fibrous polyester/cellulose wipe substrate wetted with an aqueous solution consisting essentially of high purity water selected from the group consisting of **distilled water** and **deionized water**, and from 0.001% to 0.5% by weight of an acetylenic diol surface active agent selected from the group consisting of dimethyl octynediol, tetramethyl decynediol and mixtures thereof. (*emphasis added*)

Concerning the aqueous solvent, preferred solvents and the methanol, Roberts teaches the following:

> The present invention is directed to the use of completely volatile high surface active wetting agents with ultrapure water prewetted on a wiper. Table 1 shows the efficacy of various acetylenic alcohols and preferably **diols**, such as Surfynol 61, 82 and 104 available from Air Products and Chemicals, Inc. of Allentown, Pa., in reducing the surface tension of water, which provides the necessary wetting for cleaning applications. Much lower quantities of these agents are needed to reduce the surface tension than is the case for **isopropyl alcohol**. For comparison, the surface tension of 4 wt % IPA is 50 dynes/cm (J. Liq. Chrom. Vol.10,1987, pp 561 581). (*emphasis added*)

Concerning the 3,5-dimethyl-1-hexyn-3-ol, Roberts teaches the following:

> 11. The cleaning wipe of claim 4 wherein the acetylenic diol is selected from the group consisting of: dimethyl octynediol; tetramethyl decynediol; 2,6,9,13-tetramethyl-2,12-tetradecadien-7-yne-6-9-diol; 2,6,9-trimethyl-2-

> decen-7-yne-6-9-diol; 7,10-dimethyl-8-hexadecyne-7,10-diol; 2,4,7,9-tetramethyl-5-decyne-4,7-diol; 4,7-dimethyl-5-decyne-4,7-diol; 3,6-diethyl-4-octyne-3,6-diol; 2,5-dicycloprpyl-3-hexyne-2,5-diol; 2,5-diphenyl-3-hexyne-2,5-diol; **3,5-dimethyl-1-hexyn-3-ol**, 2,5,8,11-tetramethyl -6-dodecyne-5,8-diol and mixtures thereof. (*emphasis added*)

10. Claims 17-25, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamura (US6039799).

11. Kawamura teaches paper coating composition containing water and organic solvents. These solvents include in particular the applicant's multifunctional alcohol.

Concerning the aqueous solvent, non-aqueous solvent, preferred solvents, methanol and the 2,6-dimethyl-4-heptanol, Kawamura teaches the following:

> Any liquid mediums are acceptable as long as the crosslinked amine compound (III) can be dissolved or homogeneously dispersed therein. They can be **water and/or an organic solvent**. Examples of organic solvent include monohydric alcohols such as **methanol**, ethanol, 1-, or 2-propanol, 1-, or 2-butanol, 1-pentanol, 3-methyl-1-butanol, 1-hexanol, 4-methyl-2-pentanol, 2,4-dimethyl-3-pentanol, **2,6-dimethyl-4-heptanol**, 2-ethyl-1-hexanol, 1-, or 2-octanol, lauryl alcohol, cyclohexanol, and benzyl alcohol; polyhydric alcohols such as 1,2-ethanediol, 1,2-propanediol, and 1,2,3-propanetriol; ethers having alcoholic hydroxyl groups such as furfuryl alcohol, tetrahydrofurfuryl alcohol, **ethylene glycol monomethyl ether**, ethylene glycol monoethyl ether, ethylene glycol monobutyl ether, diethylene glycol, **diethylene glycol monomethyl ether**, diethylene glycol monoethyl ether, diethylene glycol monobutyl ether, and triethylene glycol; keto-alcohols such as 4-hydroxy-4-methyl-2-pentanone; **ethers** such as diethyl ether, dipropyl ether, diisopropyl ether, dibutyl ether, .beta.,.beta.'-dichlorodiethyl ether, **1,4-dioxane**, diethyl cellosolve, and dibutyl carbitol; aldehydes such as butyl aldehyde; hydrocarbons such as cyclo**hexane**, **hexane**, heptane, toluene, o-, m-, or p-xylene; organic halogen compounds such as 1,1,1-trichloroethane, trichloroethylene, 1-, or 2-bromopropane, 1-bromobutane, lauryl bromide, 1,3-dibromopropane, 1,4-dibromobutane, 1,5-dibromopentane, 1-bromo-3-chloropropane, and 2,3-dibromo-1-propanol; ketones such as **acetone**, 2,4-pentanedione, **methyl**

> **ethyl ketone**, 2-, or 3-pentanone, 3-methyl-2-butanone, methyl isobutyl ketone, 2-heptanone, 2,6-dimethyl-4-heptanone, 2,4-dimethyl-3-pentanone, **cyclohexanone**, mesityl oxide, and isophorone; esters such as methyl acetate, **ethyl acetate**, propyl acetate, isopropyl acetate, butyl acetate, sec-butyl acetate, isobutyl acetate, amyl acetate, benzyl acetate, ethyl propionate, butyl propionate, amyl propionate, methyl benzoate, ethyl benzoate, diethyl malonate, diethyl oxalate, butyl phosphate, and ethyl acetoacetate. **Each of them can be used singly, or in combination of two or more kinds thereof.** Especially, benzyl alcohol is excellent in solubility, dispersibility, and safety, and it is advantageously used singly, or in combination with other organic solvents. (*emphasis added*)

12. Claims 17-25, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(e) as being anticipated by Roberts (US7078358).

Concerning the secondary surfactant and the 2,4,7,9-tetramethyl-5-decyne-4,7-diol, Roberts teaches the following:

> The acetylenic diols of the present invention include dimethyl octynediol, (Surfynol 82); tetramethyl decynediol (Surfynol 104); 2,6,9,13-tetramethyl-2,12-tetradecadien-7-yne-6-9-diol; 2,6,9-trimethyl-2-decen-7-yne-6-9-diol; 7,10-dimethyl-8-hexadecyne-7,10-diol; **2,4,7,9-tetramethyl-5-decyne-4,7-diol**; 4,7-dimethyl-5-decyne-4,7-diol; 3,6-diethyl-4-octyne-3,6-diol; 2,5-dicycloprpyl-3-hexyne-2,5-diol; 2,5-diphenyl-3-hexyne-2,5-diol; **2,5,8,11-tetramethyl-6-dodecyne-5,8-diol**. (*emphasis added*)

Concerning the deionized water, Roberts teaches the following:

> 1. A prewetted cleaning wipe for cleaning surfaces in an electronic materials fabricating area having a low volatile organic chemical content in the range of 0.001% to 0.5% by weight and low nonvolatile residue property of at least 1.times.10.sup.-4 torr at 25.degree. C. comprising; a woven fibrous polyester/cellulose wipe substrate wetted with an aqueous solution consisting essentially of high purity water selected from the group consisting of **distilled water** and **deionized water**, and from 0.001% to 0.5% by weight of an acetylenic diol surface active agent selected from the group consisting of dimethyl octynediol, tetramethyl decynediol and mixtures thereof. (*emphasis added*)

Concerning the aqueous solvent, preferred solvents and the methanol, Roberts teaches the following:

> The present invention is directed to the use of completely volatile high surface active wetting agents with ultrapure water prewetted on a wiper.

> Table 1 shows the efficacy of various acetylenic alcohols and preferably **diols**, such as Surfynol 61, 82 and 104 available from Air Products and Chemicals, Inc. of Allentown, Pa., in reducing the surface tension of water, which provides the necessary wetting for cleaning applications. Much lower quantities of these agents are needed to reduce the surface tension than is the case for **isopropyl alcohol**. For comparison, the surface tension of 4 wt % IPA is 50 dynes/cm (J. Liq. Chrom. Vol.10,1987, pp 561 581). (*emphasis added*)

Concerning the 3,5-dimethyl-1-hexyn-3-ol, Roberts teaches the following:

> 11. The cleaning wipe of claim 4 wherein the acetylenic diol is selected from the group consisting of: dimethyl octynediol; tetramethyl decynediol; 2,6,9,13-tetramethyl-2,12-tetradecadien-7-yne-6-9-diol; 2,6,9-trimethyl-2-decen-7-yne-6-9-diol; 7,10-dimethyl-8-hexadecyne-7,10-diol; 2,4,7,9-tetramethyl-5-decyne-4,7-diol; 4,7-dimethyl-5-decyne-4,7-diol; 3,6-diethyl-4-octyne-3,6-diol; 2,5-dicycloprpyl-3-hexyne-2,5-diol; 2,5-diphenyl-3-hexyne-2,5-diol; **3,5-dimethyl-1-hexyn-3-ol**, 2,5,8,11-tetramethyl -6-dodecyne-5,8-diol and mixtures thereof. (*emphasis added*)

Claims 17-25, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanabe (US5795702).

Concerning the aqueous solvent and the preferred solvents, Tanabe teaches the following:

> The water-soluble organic solvent as component (d) may be any organic solvent that is miscible with water and those water-soluble organic solvents which are incorporated in conventional organic amine containing liquid strippers may be employed without any particular limitations. Examples of such water-soluble organic solvents include: sulfoxides, such as dimethyl sulfoxide; sulfones, such as dimethylsulfone, diethylsulfone, bis(2-hydroxyethyl) sulfone and tetramethylenesulfone; amides, such as **N,N-dimethylformamide, N-methylformamide, N,N-dimethylacetamide**, N-methylacetamide and N,N-diethylacetamide; lactams such as N-methyl-2-pyrrolidone, N-ethyl-2-pyrrolidone, N-propyl-2-pyrrolidone, N-hydroxy-methyl-2-pyrrolidone and N-hydroxyethyl-2-pyrrolidone; imidazolidinones, such as 1,3-dimethyl-2-imidazolidinone, 1,3-diethyl-2-imidazolidinone and 1,3-diisoproypl-2-imidazolidinone; and polyols and their derivatives, such as ethylene glycol, **ethylene glycol monomethyl ether**, ethylene glycol monoethyl ether, ethylene glycol monobutyl ether, etheylene glycol monomethyl ether acetate, ethylene

> glycol monoethyl ether acetate, diethylene glycol, **diethylene glycol monomethyl ether**, diethylene glycol monoethyl ether and diethylene glycol monobutyl ether. These water-soluble organic solvents may be used either independently or in combination with themselves. Among these compounds, dimethyl sulfoxide, **N,N-dimethylformamide**, **N,N-dimethylacetamide**, N-methyl-2-pyrrolidone, 1,3-dimethyl-2-imidazolidinone and diethylene glycol monobutyl ether are preferred in view of their great ability to strip modified photoresist films. Dimethyl sulfoxide is the most preferred since it also exhibits outstanding anti-corrosion effects on substrates. (*emphasis added*)

Concerning the 2,4,7,9-tetramethyl-5-decyne-4,7-diol and the 3,5-dimethyl-1-hexyn-3-ol, Tanabe teaches the following:

> Exemplary acetylenic alcohols include 2-butyne-1,4-diol, **3,5-dimethyl-1-hexyn-3-ol**, 2-methyl-3-butyn-2-ol, 3-methyl-1-pentyn-3-ol, 3,6-dimethyl-4-octyn-3,6-diol, **2,4,7,9-tetramethyl-5-decyne-4,7-diol** and 2,5-dimethyl-3-hexyne-2,5-diol. Among these, 2-butyne-1, 4-diol is preferred. These acetylenic alcohols may be used either independently or in combination with themselves. (*emphasis added*)

13. Claims 17-25, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas (US 3,192,113).

14. Thomas teaches compositions containing ethanol, water and various N,N'-dialkyldiamines (formula IVa).

Claims 17-25, 28-29, 32, and 35-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Argentieri (US6964941).

Argentieri teaches cleaning compositions containing water, fluourinated surfactants, solvents and a non-fluorine containing surfactant (see claim 1).

Argentieri teaches various suitable non-fluorinate containing surfactants including those meeting the limitations of group VI (**tallow trimethylammonium chloride)**

Conclusion

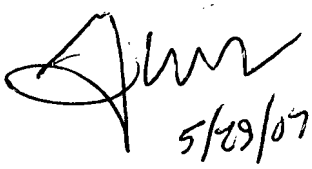
15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325. The examiner can normally be reached on 9:00-17:30 (m-f).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglass McGinty can be reached on (571)272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Gregory E. Webb
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Art Unit 1751

gew